

Appl. No.: 10/757,937
Amendment dated: October 7, 2008
Reply to Office action of: July 9, 2008

REMARKS/ARGUMENTS

Claims 1, 3-5, 15 and 18-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication Number US 2002/0100864 A1 ("Wake") in view of U.S. Patent Number 6,736,321 ("Tsikos"). In making this rejection the examiner has stated that Wake discloses all but one of the features of the rejected claims, namely the introduction of temporal/optical delay. The Examiner relies on Tsikos for support for the introduction of temporal/optical delay, and thereby submits that the combination of Wake and Tsikos renders the claimed invention unpatentable.

The present invention is directed to a method and system for optical imaging of a light scattering object. Independent claims 1 and 24 are hereby amended to more distinctly claim the scope of protection sought. The method and system of the present invention inject a pulse of light at an injection port into the object at a time t_0 and stagger collection of light from the object at a plurality of collection ports to provide a plurality of sequential time-gated optical signal based temporal point spread functions.

Wake discloses a method and system for optical imaging of a breast using time domain imaging techniques. Each of a plurality of detectors *concurrently* collects an optical signal and the system uses the plurality of *concurrently* collected signals to determine a corresponding temporal point spread function (TPSF). A time delay circuit is used to delay the detectors to allow for propagation of light in the breast after light is being transmitted and ensure concurrent detection of the optical signal at the plurality of detectors.

However, Wake does not teach nor describe *staggering* collection of light from the object over a plurality of collection ports to provide a plurality of *sequentially time-gated* temporal point spread functions, and rather teaches away from such a method as it is directed to concurrent detection of multiple temporal point spread functions.

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Tsikos relates to a planar laser illumination and imaging, and more particularly to various methods for reducing speckle-noise pattern. Tsikos describes various embodiments for time-delaying and phase-shifting light signals, which are used for reducing speckle-noise pattern. However, Tsikos does not describe staggering collection of light from an object over a plurality of collection ports to provide a plurality of sequential time-gated temporal point spread functions, as the presently claimed invention.

Thus neither Wake or Tsikos suggest staggering collection of light over a plurality of ports to provide a plurality of sequential time-gated optical signal based temporal point spread functions. For those reasons, Applicant submits that the present invention of claims 1 and 24 is patentable in view of Wake and Tsikos.

Claims 3-5, 15 and 18-23 each depend ultimately from Claim 1, and Claims 25-27 each depend ultimately from Claim 24, and each of these claims is therefore equally unsuggested by the cited prior art. Reconsideration of Claims 1, 3-5, 15 and 18-27 under this ground for rejection is respectfully requested.

Claims 6-8 were rejected under 35 U.S.C. §103(a) as being obvious over Wake in view Tsikos and in further view of U.S. Patent No. 5,692,511 ("Grable"). In making this rejection, the examiner has stated that Wake in view of Tsikos teach all of the limitations of the rejected claims with the exception of the basis for selecting time gates. It is noted that the combination of Wake, Tsikos and Grable fails to suggest the invention of Claim 1, as amended, for the reasons provided above with regard to the Wake and Tsikos reference. Since each of Claims 6-8 depends ultimately from Claim 1, each of these claims is therefore equally unsuggested by the cited prior art combination. Reconsideration of Claims 6-8 under this ground for rejection is respectfully requested.

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Claims 13-14 and 16-17 were rejected under 35 U.S.C. §103(a) as being obvious over Wake in view of Tsikos and in further view of U.S. Patent Application Publication No. US 2002/0067901 ("Mukherjee"). In making this rejection, the examiner has stated that Wake and Tsikos teach all of the limitations of the rejected claims except for the use of an ICCD camera. Mukherjee is therefore cited as showing the use of such a camera as a fast time-gated camera. Without commenting on the applicability of the Mukherjee reference in this regard, it is noted that the combination of Wake, Tsikos and Mukherjee fail to suggest the invention of Claim 1, as amended, for the reasons provided above with regard to the Wake and Tsikos references. Since each of Claims 13-14 and 16-17 depends ultimately from Claim 1, each of these claims is therefore equally unsuggested by the cited prior art. Reconsideration of Claims 13-14 and 16-17 under this ground for rejection is respectfully requested.

The indication of the allowability of Claims 9, and 11-12 is acknowledged. Claim 9 has been amended to agree with the amendments to Claim 1, from which it depends, and Claim 10 has been canceled in light of the amendments made to Claim 9. Moreover, as the independent claims of the application are believed to now be in condition for allowance, Claims 9 and 11-12 have not been rewritten in independent form at this time.

In light of the foregoing amendments and remarks, it is respectfully requested that all the claims be allowed such that the application may be passed to issue. If it is believed that a telephone interview will help expedite prosecution of the application, the examiner is invited to call the undersigned.


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AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees that may be required for this response to Deposit Account **13-4500**, Order No. **5105-0002**, and is hereby petitioned for any extension of time that may be required to make this response timely.

Respectfully submitted,
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